

VIC-20

THE FRIENDLY COMPUTER



 **commodore**
COMPUTER

INTRODUCING THE

Before the VIC 20 revolutionized personal computing, many people regarded computers as powerful machines reserved only for big businesses, affluent school systems, or hobbyists. Now, thanks to Commodore, everyone can afford to own a personal computer.

The Commodore VIC 20 is the world's most affordable, full-featured, expandable color computer.

The VIC 20 is designed so everyone in

the family, young or old, can operate it with ease and confidence. First-time computerists can write their first program within 15 minutes. Yet, the VIC 20 can be expanded to meet the most sophisticated needs of experienced programmers and hobbyists.

Built-in features are unique to any computer in this price range. The VIC-20 offers a full-size typewriter keyboard with upper/lower case letters and 65 graphic characters, a powerful built-in BASIC

language which prompts you if you make mistakes, 16 colors easily changed from the keyboard, 4 sound amplifiers for music and sound effects, 4 programmable function keys, plug-in program cartridges, joysticks, and a complete range of low-priced modular accessories.

Expanding the VIC 20 System

The VIC 20's capabilities can be increased through a wide variety of add-on accessories which tailor the system to



COMMODORE VIC-20

any need or budget. A complete library of plug-in program cartridges provides immediate access to computer games, and practical application programs, such as home budgeting. The VIC also accepts plug-in memory expander cartridges which can increase the memory from 5K bytes to 32K bytes. Additional accessories include a cassette recorder which uses ordinary audio tapes, a low-priced disk drive, modem, dot matrix printer, game controls and more.

Commodore Expertise

Commodore is a fully-integrated manufacturer of microcomputer systems, with products sold in nearly 50 countries. Commodore computers are vertically integrated products, meaning we control all aspects of production — from design through assembly. Our MOS Technology semiconductor facility developed the 6502 microprocessor chip which is used in most personal computers today.

Commodore computers are dependable tools in environments ranging from workshops to manufacturing facilities and scientific laboratories. Entire school systems use Commodore computers because of their high performance, reliability, and affordable prices. The VIC 20 continues the Commodore tradition for pioneering computer technology with a small computer which is truly "friendly" — friendly in price, friendly to learn, friendly to use, expand and enjoy.



WHAT THE VIC=20

How to tell a game machine from a true computer

There are lots of game machines on the market . . . devices that let you play arcade-style games on your television set . . . but why buy a game machine when you can buy a personal computer for the same price?

Commodore's VIC 20 lets you plug in the same exciting game cartridges available on most game machines . . . but the VIC is a full featured **computer** and that makes a big difference.

Here's a simple test to help you find out whether you're buying a game machine or a computer . . . simply ask the salesperson if the device you're evaluating has these features:

1. Does it have a full size typewriter keyboard?

(Some game machines try to pass themselves off as computers by including flat plastic keypads or calculator keys that look like the real thing but are difficult to use... so be careful!)

2. Can you use all 3 types of storage media: plug-in program cartridges, cassette tapes, AND floppy disks?

(Many game machines offer a cassette recorder and tapes but do NOT offer a disk drive)

3. Is full-power BASIC built-in or do you have to pay extra for an "extended" computing language?

(The VIC 20 has a fully extended BASIC built into its operating system)

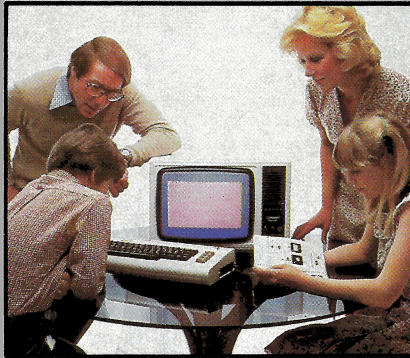
4. Is a self-teaching instruction book included or do you have to pay extra for it?

(If there's no instruction book the chances are you're not buying a real computer. The VIC includes a free "friendly computer guide" for first-time computerists.)

5. How many accessory ports are there?

(Several ports mean you can hook the computer to special accessories like a printer, disk drive, cassette recorder, modem and game controls. The VIC has 4 accessory ports and a growing line of special accessories.

The advantages of owning a personal computer instead of a game machine are obvious. Make sure you make the right decision before you buy.



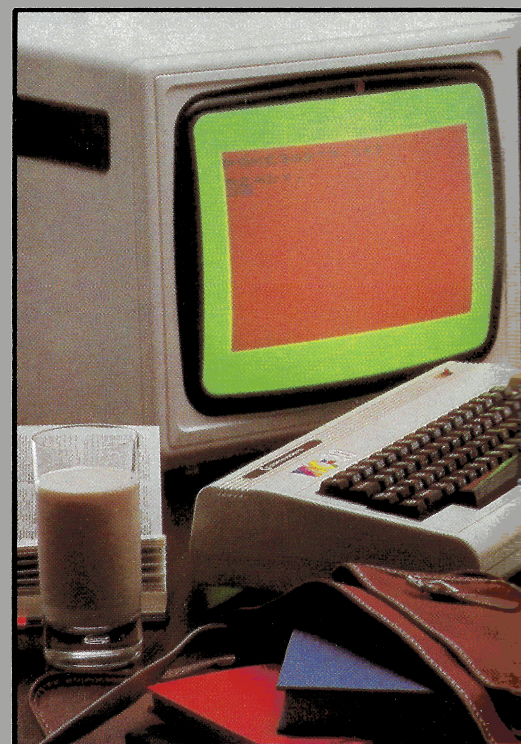
Innovative software makes the VIC "Compute"

The key to any computer is its software... the pre-recorded programs you buy on cartridge, tape cassette or diskettes which actually make the computer "compute." The VIC 20 comes with a wide selection of programs, primarily on plug-in cartridge and tape cassette.

Plug-in program cartridges for the VIC are available at most computer retail centers and fine quality department stores. Programs on cassette tape, for use with the Commodore DATASSETTE recorder are available individually, or may be purchased in VARIETY SIX-PACKS. Programs will be available on floppy diskettes during early 1982, after the VIC Disk Drive is introduced.

To help you find specific programs quickly and easily, Commodore has divided its software into 5 categories and color-coded the packaging using the following scheme:

RED:	Games and Recreation
BLUE:	Education
GREEN:	Business & Calculation
BLACK:	Computing Aids
ORANGE:	Home Utility



CAN DO FOR YOU

Recreation & Game Programs

Here is a list of entertainment programs which are available now, or soon to be available for the VIC 20:



- VIC Avenger (cartridge)
- Midnight Drive (cartridge)
- Jupiter Lander (cartridge)
- Draw Poker (cartridge)
- Superslot (cartridge)
- VIC Alien (cartridge)
- Rat Race (cartridge)
- Sargon Chess (cartridge)
- 5 Adventure Games (cartridge)
- Recreational 6-Pack-A (tapes)
 - Car Chase
 - Biorhythm/Compatibility
 - Blue Meanies From Outer Space
 - Slither/Super Slither
 - VIC 21 (Casino Blackjack)
 - Spacemath

Educational Programs

The VIC-20 makes learning fun with exciting math games and other programs on tape and cartridge. The VIC-20 is also ideal for teaching yourself how to program . . . you don't have to know anything about computers to learn . . . you don't even have to know how to type!

Our first educational programs include:

- Teach Yourself Programming (A 5-part series of books & tapes from BASIC to Machine Language)
- Vol. 1 Introduction to Computing
- Vol. 2 Introduction to BASIC Programming
- Math Games I (cartridge)
- Educational 6-Pack (Math improvement tapes for grades 1 to 6)



Home Calculation

The first programs to be released strictly for home use include:

- VIC Home Babysitter (cartridge)
- BRIDGE Teach and Play (cartridge)
- Home Calculation 6-Pack A (tapes)

Business & Calculation

The following programs are designed for using the VIC as a wordprocessor, computer terminal (with modem), calculator and decision maker:

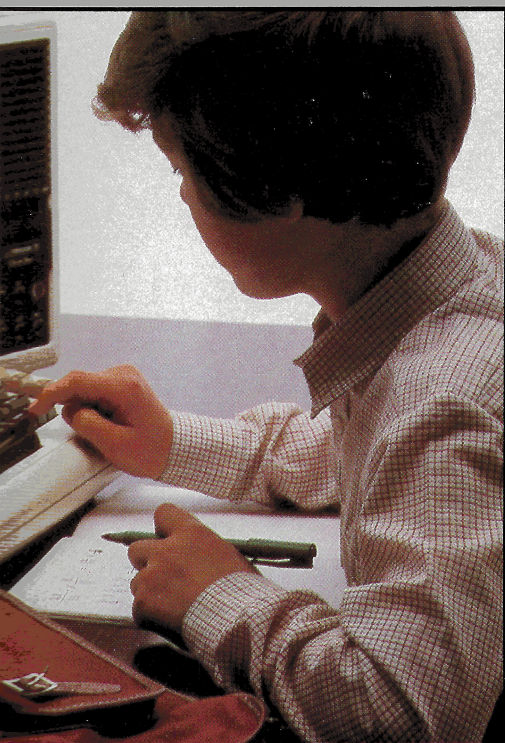
- VICWriter I (wordprocessing cartridge)
- VICTerm I (modem terminal program on tape)
- Small Business 6-Pack A (programs on tape to help provide faster calculation of pricing, breakeven analysis, investments, loans, business planning and forecasting).

Computing Aids

These programs are designed to help programmers learn programming, write better programs and/or increase the computing power of the VIC:

- VIC Programmers Aid (cartridge)
- VIC Super Expander (cartridge)
- VICMon Machine Language Monitor (cartridge)
- Programmable Character Set & Gamegraphics Editor (tape)

These are only a few of the programs scheduled for release. Additional programs will be introduced during the coming months, including challenging strategy games, more arcade-style action games, and a variety of practical programs for use in schools, offices and the home.



PROGRAM STORAGE

The sets of instructions that enable the VIC 20 to perform a task can be stored either on tape, disk or cartridge. These three methods of storing and retrieving computer programs and information permit the VIC 20 owner to purchase a wide variety of computer software or to create his or her own programs and store them. This flexibility makes the VIC 20 an ideal choice for all levels of computer enthusiasts, from the novice to the experienced programmer.

Cassette

The VIC 20 has a special socket so that you may plug in a Commodore cassette tape unit directly. Your programs can then be stored on tape and loaded into the computer whenever you wish to use them. The cassette tape storage system will be ideal for almost all VIC 20 owners.

Cartridge

One of the VIC 20's special features is its ability to use programs that have been recorded on a cartridge. The cartridges are simply plugged into the VIC 20 and used directly. Many programs for games and special applications are sold in cartridge form. A special cartridge is also available that will help you store and use large amounts of information or data from a disk.

Disk Storage

The VIC 20 offers the option of storing programs and information on disk. Sophisticated computer owners sometimes require the faster and larger facility offered by the disk medium. For them, Commodore has introduced a low priced single disk drive unit especially designed for the VIC 20. By combining this unit with the business cartridge and a printer, the VIC 20 becomes the ideal system for the small businessman or serious computer programmer.

A TOUR OF THE VIC



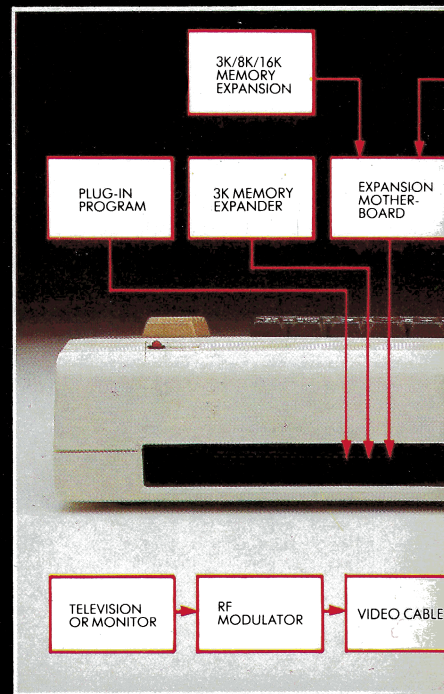
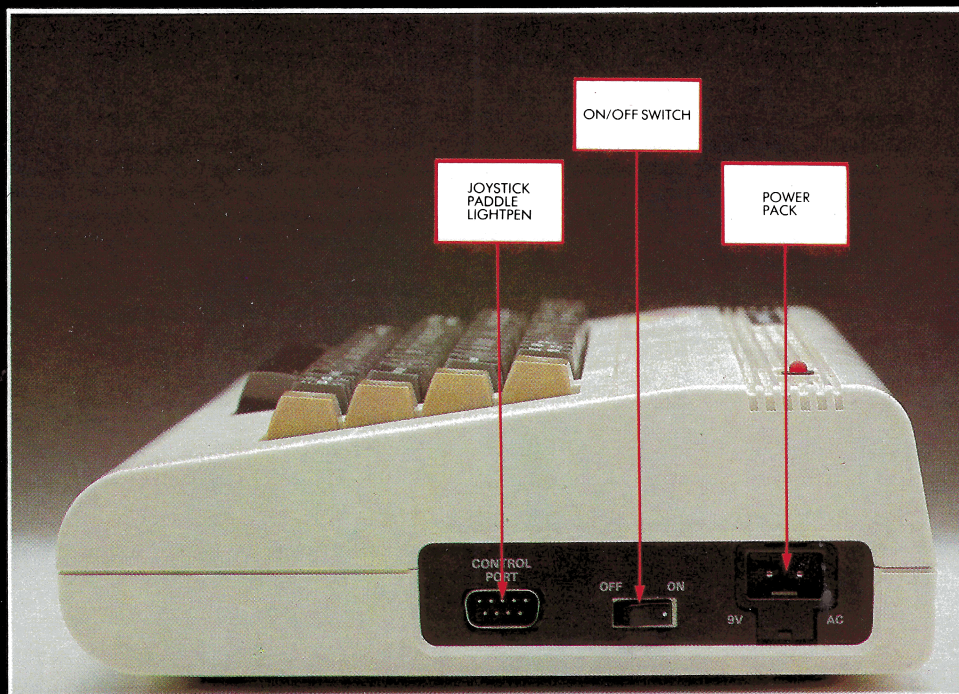
It's difficult to convey in a one dimensional publication just how powerful a 3 dimensional computer can be, but a good way to get to know the VIC 20 personal computer is to take a quick tour of the keyboard.

The keyboard contains upper and lower case keys, numbers and symbols, just like a typewriter keyboard. In addition, there are special editing keys, and the famous "PET GRAPHICS" character set. Here then, is a brief "tour" of the VIC keyboard:

Graphics & the Commodore Key

When you turn on the VIC, you're automatically in "graphics" mode which means you can type upper case letters AND the more than 60 graphics you see on the keys. There are two graphics on

VIC-20 EXPANSION CAPABILITIES



VIC-20 KEYBOARD

each key. To get the graphic on the right side, simply hold down the SHIFT key and type the key with the graphic you want. To get the graphics on the left side, hold down the "COMMODORE" key (the little flag). In this way, you can type upper case letters and the full graphics set at the same time!

Upper/Lower Case & Graphics

To get into the "text" mode you simply press the SHIFT and COMMODORE keys together. This lets you use the VIC like an ordinary typewriter, with full upper and lower case letters, plus all the graphics on the LEFT side of the keys. These are the graphics which are most suited for charts, graphs and business forms.

Color

You can change the colors of the characters you type by pressing the CTRL key and one of the 8 color/number keys. The colors are black, white, red, cyan, purple, green, blue and yellow. You can set — and change — colors inside or outside a computer program. In addition to the eight character colors, you can also change the colors of the BORDER and SCREEN on your television set, by typing a special command called a "POKE." For example, if you type the command POKE 36879, X (where X is some number from 1 to 255,) you can get up to 255 different

combinations of screen and border colors, including 16 screen colors and 8 border colors.

Special Editing Keys

Here are some of the other special keys which make the VIC such a powerful computer:

CTRL — used to set character colors, and, in conjunction with special programs such as wordprocessing, to execute special commands.

Software writers can select their own "Control" commands and incorporate them into their programs.

RUN/STOP — The RUN/STOP key lets you automatically load programs into the VIC's memory from a cassette tape. Hitting this key without shifting (i.e., STOP) interrupts a running program or listing. If you stop a program and want to resume it where you left off, you can type "CONT" and the program will "continue."

SHIFT — The VIC has two SHIFT keys and a SHIFT LOCK key, just like a typewriter, for typing long strings of upper case letters or graphics.

RVS ON and RVS OFF — These two keys let you type reverse characters on the screen (for instance white on black instead of black on white).

CLR/HOME — This key makes the cursor move to the "home" position at the top lefthand corner of the screen. If

you type SHIFT and CLR/HOME you "clear" the screen of all the characters that were present.

INST/DEL — This is a super editing key which lets you insert or (shifted) delete characters. It's great for correcting mistakes and inserting extra information.

RESTORE — This is a "reset" key. If you type the RUN/STOP key and the RESTORE key together, you completely reset the computer as if you just turned it on . . . with the benefit that any programs you had in the memory are retained and can be listed or run from the start.

CURSOR KEYS — Ability to move the screen cursor up and down and sideways by hitting single keys is a powerful feature of the VIC. Being able to move the cursor this easily is essential but not all computers include it as a feature.

RETURN — The RETURN key is used primarily for entering commands and instructions to the computer.

Programmable Function Keys

One of the most unique features on the VIC is that mysterious vertical row of "function" keys on the far right side of the keyboard. There are four keys and (if you shift them) a total of eight functions. These keys are not defined when you turn on the computer, but you may assign any BASIC command or instruction set to them, under program control.

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SYSTEM PERIPHERALS

VIC 20 SYSTEM PERIPHERALS

Watch for these exciting peripherals and accessories, scheduled for introduction.

Plug-in Program Cartridges — VIC Avenger, Sargon Chess, Adventure Games, Personal Finance, Math Improvement, VICWriter and more . . .

VIC Game Controllers — joysticks, paddles & lightpen.

Commodore Datassette — a low-priced cassette recorder for storing and retrieving programs on ordinary audio cassette tapes.

VIC Graphic Printer — an 80-column dot matrix tractor feed printer for producing paper copies of programs, text and graphics.

VIC Single Disk Drive — stores up to 170K of information on each single 5½ inch floppy diskette.

VIC 3K, 8K and 16K Memory Expanders — direct plug-in cartridges to increase the VIC's memory and program capacity.

VIC Expansion Module — lets you plug in up to 6 separate memory expansion, program and interface cartridges.

VIC Telephone Modem — the lowest priced modem in the personal computer industry.

VIC RS232 Interface Cartridges — for using standard RS232 modems, printers and other RS232 devices.

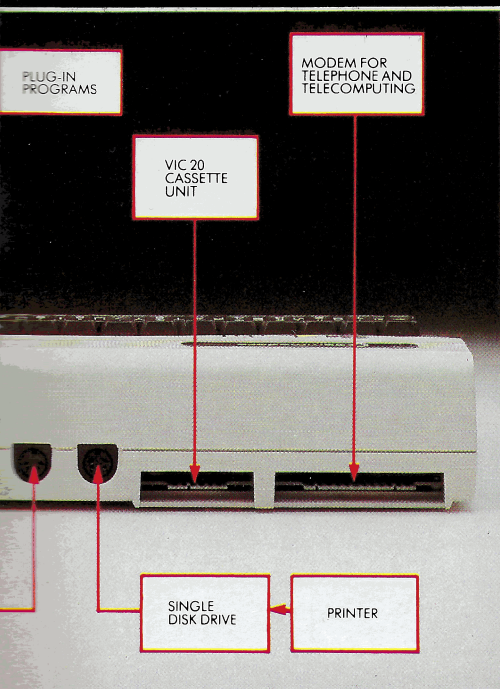
IEEE-488 Interface Cartridge — for using PET/CBM peripherals and other IEEE devices with the VIC.

VIC Super Expander Cartridge — 3K extra memory, graphic plotting and music commands, programmable function editing.

Programmers Aid Cartridge — program editing aid for BASIC programmers.

Teach Yourself Programming — a series of tapes and books to help you learn programming, from BASIC to MACHINE CODE.

VIC 20 Reference Guide — the complete VIC Reference Book (Hardware/Software)

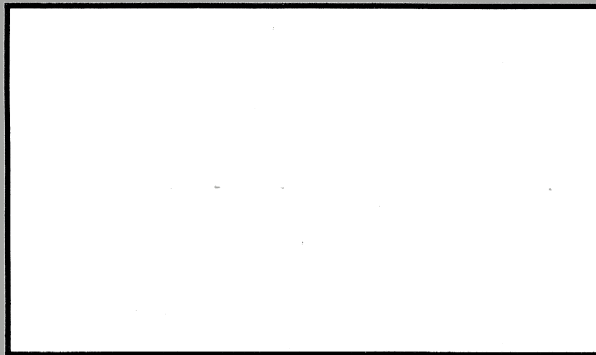


VIC-20 SPECIFICATIONS

Although the VIC 20 can be easily managed by the first-time user, it can quickly become a sophisticated computer. The basic technical specifications of the VIC 20 are:

- 5K RAM expandable up to 32K
- RS232C interface capability
- 8 border colors, and 16 screen colors
- 8 screen character colors generated directly from the keyboard
- 4 tone generators, covering 5 octaves including a "white noise" generator for sound effects
- 22 characters wide by 23 lines deep screen display
- 88 character program line length
- 64 ASCII character set, upper and lower case alphabet, numerics, and business/calculation symbols
- full PET-type graphics character set generated directly from keyboard
- high resolution graphics capability
- 176 x 184 pixels (32,384 in total) maximum resolution
- 4 programmable function keys
- automatic repeat on space bar, insert, delete, and cursor control keys (other keys can be programmed to repeat)

For additional information,
contact your local Commodore dealer



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